

Visitation Valley Groundwater Basin

- Groundwater Basin Number: 2-32
- County: San Francisco, San Mateo
- Surface Area: 5830 acres (9 square miles)

Basin Boundaries and Hydrology

The Visitation Valley Groundwater Basin is a roughly triangular shaped basin in the San Francisco Bay Hydrologic Region within the City of San Francisco. The San Bruno Mountains bound it on the southwest. It is separated from the Islais Valley Groundwater Basin to the northwest and the South San Francisco Groundwater Basin to the northeast by bedrock topographic highs. The San Francisco bay forms the basin boundary along its eastern extent (Phillips et al, 1993.) Mean annual precipitation within the basin is in the range of 20 inches to 24 inches (USDA, 1999).

Hydrogeologic Information

Water Bearing Formations

Geologically the basin can be broadly classified as unconsolidated sediment and bedrock (Phillips et al, 1993). The primary water-bearing formations are unconsolidated sediments, including dune sand, the Colma Formation, bay mud and clay, and artificial fill (Phillips et al, 1993). The Colma Formation consists of fine-grained sand, silty sand and discontinuous beds of clay to five feet thick (Phillips et al, 1993). The artificial fill is largely composed of dune sand with lesser amounts of silt and clay, and some manmade debris (Schlocker, 1974). It reaches a maximum total thickness of about 60 feet (Phillips et al, 1993). The unconsolidated material in aggregate has a maximum thickness of 200 feet indicating a relatively low storage capacity for groundwater and minimal protection from potential surface contamination (USGS, 1993). Bedrock of the Franciscan Complex underlies the water-bearing formations (Schlocker, 1974.)

Groundwater Recharge

Sources of recharge include infiltration of rainfall, landscape irrigation, and leakage from water and sewer pipes. Average groundwater recharge in the South San Francisco Groundwater Basin for the water years 1987-1988 was estimated to be 269 acre-feet/year (Phillips et al, 1993).

Groundwater Level Trends

Generally groundwater levels have remained relatively stable within the Visitation Valley groundwater basin (Phillips et al, 1993).

Groundwater Storage

Groundwater Storage Capacity.

No estimate of groundwater storage capacity was found.

Groundwater in Storage.

No estimate of groundwater in storage was found.

Groundwater Budget

A hydrologic routing model was developed by the USGS to estimate groundwater recharge on the San Francisco peninsula. The model was based on land use zones in the region. A detailed discussion of the groundwater budget can be found in the report by Phillips et.al, 1993.

Groundwater Quality

Characterization.

Most of the groundwater is a mixed cation bicarbonate type. Generally the dissolved constituents in the local groundwater are within guidelines recommended by the U.S. Environmental Protection Agency (1986).

Impairments.

Water from wells in the basin can be considered to be hard. Elevated nitrate concentration is the most common water quality problem with wells in the San Francisco peninsula and high chloride concentrations were observed in several wells (Phillips et al, 1993).

Well Characteristics

| Well yields (gal/min) | | |
|------------------------------|----------|----------|
| Municipal/Irrigation | Range: – | Average: |
| Total depths (ft) | | |
| Domestic | Range: - | Average: |
| Municipal/Irrigation | Range: - | Average: |

Active Monitoring Data

| Agency | Parameter | Number of wells /measurement frequency |
|-----------------------------------------------|-----------------------------|-----------------------------------------------|
| | Groundwater levels | |
| | Miscellaneous water quality | |
| Department of Health Services and cooperators | Title 22 water quality | |

Basin Management

Groundwater management:

Water agencies

Public

Private

References Cited

- Phillips, Steven P., Scott N. Hamlin, Eugene B. Yates. *Geohydrology, Water Quality, and Estimation of Ground-Water Recharge in San Francisco, California 1987-92*. US Geological Survey Water-Resources Investigations Report 93-4019, 1993.
- Schlocker, Julius. *Geology of the San Francisco North Quadrangle, California*. US Geological Survey Professional Paper 782, 1974
- USDA. United States Average Annual Precipitation, 1961-1990: Map Layer, 1999

Errata

Changes made to the basin description will be noted here.